

flora which are actually functioning in supporting the plant are possessed of greater breaking strength, all along their length, than tendrils of similar age that are not functioning. According to the conclusions of the author there are two different factors, contact and tension, which combine to produce the increased strength. The effect of contact of the tendril with supporting objects is to increase the numbers, and the thickness of the walls, of the cells of the xylem; while the effect of tension is to produce a thickening of the walls of the pith by which it comes to function as a real mechanical tissue. It has never been considered that pith achieved any mechanical value.

TO MOUNT DISSECTIONS OF MOUTH-PARTS OF INSECTS, UNDER ONE COVER-GLASS, WITHOUT CEMENT*

1. Dissect out the various parts; place them on a slide; put another slide on top; tie with cotton, and put into methylated spirit for 24-48 hours, according to size of specimens.

2. Remove one of the slides, carefully detach the parts, and place them in clove oil (or terpineol: V. A. L.) to clear. Then cover with turpentine.

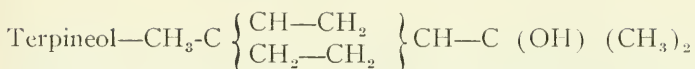
3. Place the mouthparts on a slide in the desired order, cover all with a cover glass which must be held securely on with wire clip. Allow thin Canada balsam in benzole to run under cover. As the benzole evaporates add more of the thin balsam, until the space is filled.

4. Allow preparation to dry a week or more. Remove clip, wash away excess balsam with camel's hair brush in benzole. When completely dry apply coat of shellac varnish, if desired, to edge of cover glass.

TERPINEOL: A NEW CLEARING AGENT

This agent can be used for all microscopical purposes including celloidinized sections. The oils are chemically known as terpenes, terpene alcohols, sesquiterpenes, and a few others with their esters, such as terpinyl acetate. All these substances are found in varying amounts in one and the same oil.

*Personal communication from Martin J. Cole, London, to Dr. V. A. Latham.



very much resembles cineol which has as its chief constituent oil cajeput, oil eucalyptus, and a few other oils. Altho terpineol is not itself present in these oils, its derivatives, such as cineol, terpinyl acetate are the chief constituents. The chief draw back to most of the oils is that they are not universally applicable to microscopic purposes, and so several kinds must be kept. They often, too, dissolve celloidin and the anilin stains; and are high priced.

The new terpineol, which is manufactured synthetically from oil turpentine, replaces oil of bergamot by clearing celloidin sections, having a perfect clearing action; dissolves paraffn; does not dissolve anilin colors; has a refractive index of 1.49; and is only 1-5 the price of bergamot.

V. A. L.

DEVELOPMENT OF SPERM IN HYBRIDS

Pall (*Arch. Mikr. Anat.* 1911) report studies on the spermatogenesis in hybrid ducks and in young mules, in comparison with the stages characteristic of the pure parental strains. The early stages of development in the testis appears to be normal, so far as microscopic technic can determine; but for some reason the dividing cells in the last division stages, are unable to form perfect spermatozoa. This is one of the reasons at least for the frequent infertility of hybrids.

FUNCTION OF THE MALE ACCESSORY REPRODUCTIVE GLANDS IN MAMMALS

Iwanov (*Arch. Mikr. Anat.* 1911) believes that there are probably two functions to the prostatic fluid and other secretions produced by the glands accessory to the male reproductive structures in mammals. His conclusions are based upon experimentation. The principal function he believes to be one of diluting the seminal fluid proper and of furnishing volume by means of which emission is facilitated and a medium of motion insured. Secondly, he believes that there are elements in the prostate secretion, particularly, that serve to stimulate the sperm cells to higher activity,—coincidentally with shortened life.